Monthly Webex Tag-up, 9 October 2014

Agenda

1. Announcements and opportunities

2. Fall AGU

3. Science Team Meeting(s)

4. Data Archive Status, Data Products, and Plans

Air & Waste Management Association

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THE MAGAZINE FOR ENVIRONMENTAL MANAGERS

SEPTEMBER 2014

Also in this issue:

EPA Research Highlights:
The Citizen Science Toolbox

PM File:
Improve Document Generation Efficiency
with Version Control

DISCOVER-AQ

Advancing Strategies for
Air Quality Observations
in the Next Decade

As part of this mission,
scientists collect
pollutant measurements
using aircraft, sondes,
satellites, and ground-
based instruments.

Special DISCOVER-AQ Issue of em (Environmental Manager)

The issue was proposed by Susan Weirman (MARAMA) and Russ Dickerson during the AQAST meeting in Maryland

The focus is primarily on the first deployment, but has some information from California and Houston.

The issue is available from the DISCOVER-AQ website:
http://discover-aq.larc.nasa.gov/pdf/EM0914-60pFNL(L)-Copyright-1.pdf

For more details, visit http://ace2015.awma.org/

Abstract submission deadline is 3 November 2014

"Discover" Air Quality Field Studies is listed as a topic in the call for abstracts

Recent ACCDAM Selections relevant to DISCOVER-AQ

Jennifer Hegarty (AER)
Understanding Spatiotemporal Variability in Urban Mixed Layer Heights through Observations and Modeling

Yongxiang Hu (NASA LaRC)
Water Cloud Depolarization Multiple Scattering Relation: A Novel Technique for Spaceborne Lidar Retrievals of Above-Cloud Aerosol Optical Depth (ACAOD)

Ralph Kahn (NASA GSFC) Content and Context from Space-Based Multi-Angle Imaging

Lesley Ott (NASA GSFC)
Statistics for Stratospheric Influence on Surface GHGs during NASA's North American Field Campaigns: A Study with Aircraft & Satellite Data and High-Resolution Global Models

Hanwant Singh (NASA ARC)
Oxygenated Volatile Organic Chemicals (OVOC) in the Atmosphere: Analysis of Data from North American Airborne Campaigns

Glenn Wolfe (NASA GSFC)
Understanding the Response of Tropospheric Chemistry to Trends in Natural and Anthropogenic Emissions through In Situ and Remote Observations of Formaldehyde

Robert Yokelson (University of Montana)
Improved Understanding of Fire Emissions and Smoke Plume Aging to Advance Global Atmospheric Chemistry

⦿AGU FALL MEETING

San Francisco | 15–19 December 2014

71 abstracts reference DISCOVER-AQ and/or FRAPPÉ

27 abstracts are from the science team and 44 are from collaborators

Abstracts spread across 20 sessions, although 30 are in our two proposed sessions.

Our two proposed sessions succeeded in attracting contributions from the wider community. (Ozone – 32 submissions, 16 from us; Aerosol – 23 submissions, 14 from us)

We are being asked to submit a proposal for a press briefing to discuss the completion of the four field studies, early findings, and what benefits we expect from the project.

Please consider presenting some of your key material during the November or December tag-ups before AGU

AGU FALL MEETING
San Francisco | 15–19 December 2014

Three invited overview presentations need to broadly represent the collective work of the science team:

Challenges and opportunities for remote sensing of air quality: Insights from DISCOVER-AQ (Jim Crawford)

An Overview of Ozone and Precursor Temporal and Spatial Variability in DISCOVER-AQ Study Regions (Ken Pickering)

Relating Aerosol Profile and Column Measurements to Surface Concentrations: What Have We Learned from Discover-AQ? (Ray Hoff)

We will be approaching some of you based on your AGU abstracts, but feel free to contact us if you have something to share

Science Team Meeting(s)

Our intention is to have a joint Science Team meeting in Boulder sometime next spring (need to discuss timing and length)

We can also consider arranging some smaller topical meetings between now and roughly next June that would focus on synthesis of the four campaigns to address overarching themes, e.g., the three primary objectives:

1. Relate column observations to surface conditions for aerosols and key trace gases O_3, NO_2, and CH_2O

2. Characterize differences in diurnal variation of surface and column observations for key trace gases and aerosols

3. Examine horizontal scales of variability affecting satellites and model calculations

We are open to other ideas and topics…

Science Team Meeting(s) cont.

Preparation for meetings and identification of topics worth convening a small meeting would benefit from an update on each group's planned analysis activities over the next year.

I have already heard from a few groups, but over the next telecon or two it would be good to get a clearer picture of the overlap and gaps in our collective plans.

We are not looking for paper titles, just avenues of analysis.

Recent Updates to the Data Archive

Merge Updates:

– Houston P-3B merge updated on 1 October (DACOM data updated)

– Colorado P-3B merge updated on 15 September

– Colorado C-130 merge updated on 16 September

– P-3B video files are now available (posted by John Barrick)

– Google Earth kml files are available for all P-3B and C-130 flights (posted by Ali Aknan)

Preliminary Pandora Data Available

If anyone would like to look at Pandora data in advance of our delivery to the archive, it is available at the following url:

http://avdc.gsfc.nasa.gov/pub/DSCOVR/Pandora/D-AQ-Colorado/

There you will find a zip file named D-AQ-Colorado.zip

It is **not** in ICARTT format - but the format is obvious. The data are partially cloud screened, so there are gaps because Colorado was pretty cloudy. Jay has not reviewed the data yet, but will review it before delivering it to the archive in ICARTT format.

Please contact Jay Herman (jay.r.herman@nasa.gov) with any questions.

Current and Potential Data Products

- Intercomparison plots:
  - P-3B vs. UMD Cessna 402B
  - P-3B vs. C-130

- Column density estimates for O_3, CO_2, NO_2, CH_2O, H_2O, scattering (550 nm), and absorption (532 nm)

- P-3B vertical profile plots (Gao, Michael, and Morgan):

  Parameters: Temperature, potential temperature, specific humidity, O_3, CO, CH_4, CO_2, NO, NO_2(NCAR), NO_2(LIF),NO_y, CH_2O, scattering coefficient (550 nm), absorption coefficient (532 nm), CN(>3nm), Vol(<1µm), BC, and WSOC, jNO_2, surface temperature

- Gridded vertical profiles species:

  Temperature, potential temperature, specific humidity, O_3, CO, CH_4, CO_2, NO, NO_2(NCAR), NO_y, CH_2O, scattering coefficient (550 nm), absorption coefficient (532 nm), CN(>3nm), Vol(<1µm), BC, and WSOC

Current and Potential Data Products

- Merge files (Michael):
  - 1, 15, and 60 sec, LARGE SP2/WSOC and PILsIC

- High resolution Ground site data from local agencies
  - Maryland and California complete
  - Texas data needs to be reformatted into useful format
  - Hourly AirNow Tech archived for Colorado, high resolution data coming soon

- Boundary layer height estimates:
  - Meteorological BL and BuL heights based on potential temperature (Michael, Amy Jo, and Gao)
  - Mixing layer heights: HSRL PBL height (Amy Jo and Rich)

- HYSPLIT model back-trajectories plots and data (only for Maryland at this time, interest in other deployments?)
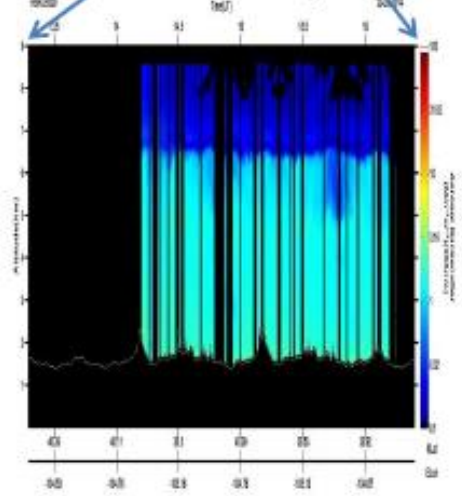
- P-3B aircraft videos (complete for all deployments)

DISCOVER AQ Micro-Pulse Lidar Data (T. Berkoff et al.)
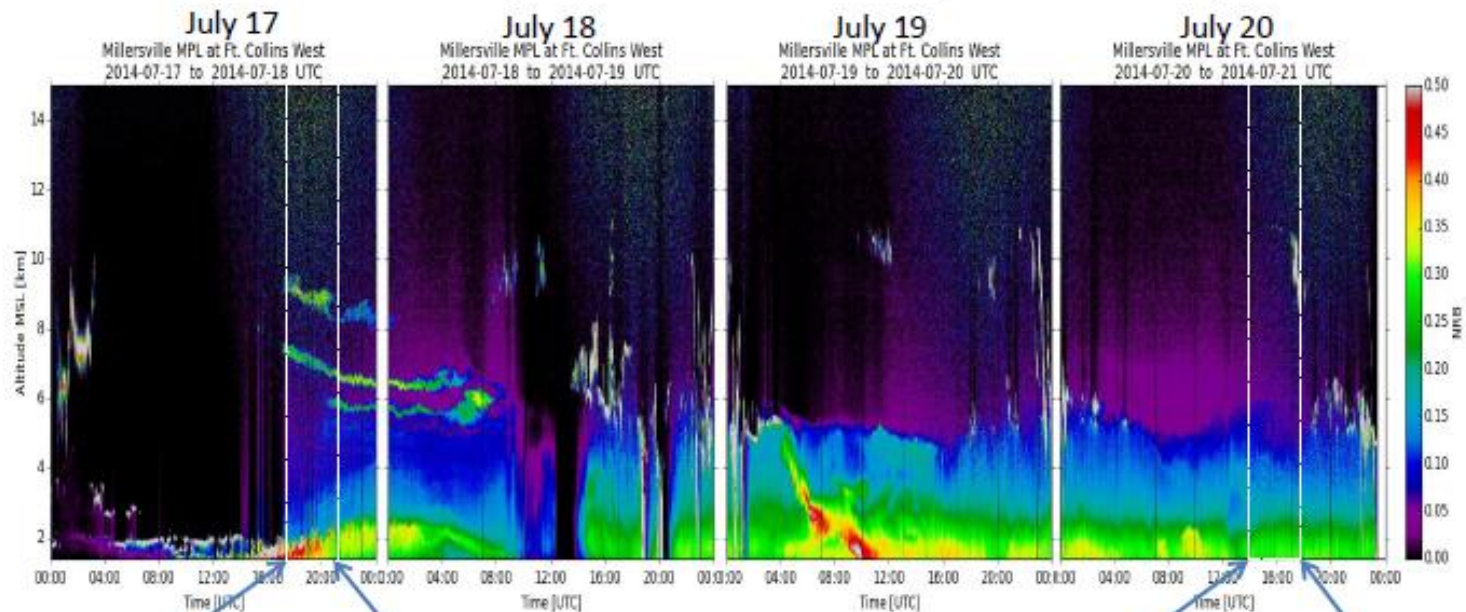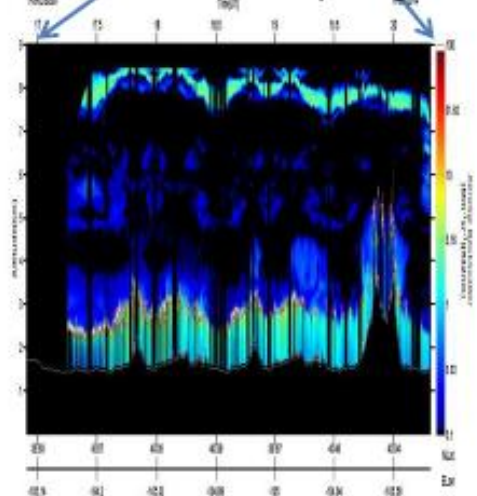
DiscAQ MPL data:
- 3 sites: Golden (UMBC), Ft. Collins(Millersville), Platteville(Penn State)
- Ft. Collins and Platteville HDF data files and JPEG quick-looks are in archive
- HDFs contain attenuated backscatter profiles, higher-level data products possible (Mixed layer height, Aerosol retrievals, etc.)